User's Guide

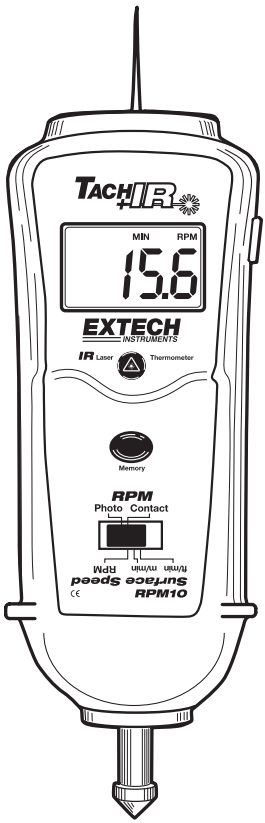
EXTECH® INSTRUMENTS

A FLIR COMPANY

TACH IR

Model RPM10

Laser Photo / Contact Tachometer with IR Thermometer



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Introduction

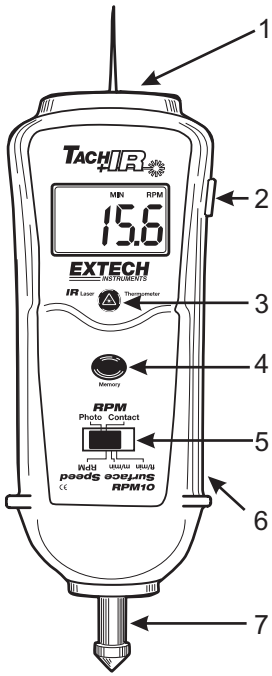
Congratulations on your purchase of Extech's Laser Photo/Contact Tachometer with Non-Contact IR Thermometer, Model RPM10. This Tachometer provides contact RPM and Linear Surface Speed measurements, non-contact RPM measurements and IR temperature measurements. The laser pointer beam provides accurate long distance measurements for photo tachometer measurements and also identifies the measurement spot for the non-contact temperature tests. This meter, with proper care, will provide years of safe reliable service.

CAUTIONS

- Improper use of this meter can cause damage, shock, injury or death. Read and understand this user manual before operating the meter.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- This device is not a toy and must not reach children's hands. It contains hazardous objects as well as small parts that the children could swallow. In case a child swallows any of them, please contact a physician immediately
- Do not leave batteries and packing material lying around unattended; they can be dangerous for children if they use them as toys
- In case the device is going to be unused for an extended period of time, remove the batteries to prevent them from training
- Expired or damaged batteries can cause cauterization on contact with the skin. Always, therefore, use suitable hand gloves in such cases
- See that the batteries are not short-circuited. Do not throw batteries into the fire.
- **Do not directly view or direct the laser pointer at an eye.** Low power visible lasers do not normally present a hazard, but may present some potential for hazard if viewed directly for extended periods of time

Meter Description

1. Photo Tachometer sensor, IR Thermometer sensor and laser source
2. MEASURE button
3. IR Thermometer button
4. Memory button
5. Function Switch
6. Battery compartment (rear)
7. Contact Tachometer shaft



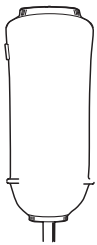
Meter Operation

Reversible LCD Display

The meter display indicates Photo Tachometer and IR thermometer measurements in one direction and Contact measurements in the opposite direction. This permits the user to easily read the measurement digits in both measurement modes with the meter held in either direction.

Temperature Units Selection

The displayed temperature units are selected via a slide switch located in the battery compartment. To select the units (ºC/ºF), open the battery compartment and remove the batteries, then set the switch for the desired units.

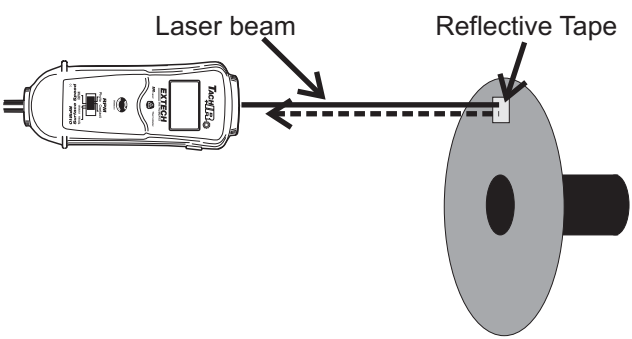


NON-CONTACT PHOTO TACHOMETER MEASUREMENTS

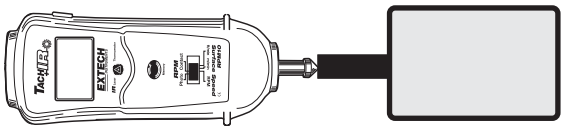
1. Apply an appropriately sized square piece of reflective tape to the surface of the object under test.
2. Move the Function switch to the PHOTO position.
3. Point the laser pointer end of the meter toward the device under test at a distance of 50 to 2000mm (2" to 79").
4. Press the Measure button (located on the right side of the meter) and align the laser pointer beam with the reflective tape.
5. Verify that the ((●)) Monitor Indicator appears on the LCD when the object under test passes through the light beam.
6. Release the Measure button when the RPM reading stabilizes on the LCD.
7. If the rpm is under 50**,** apply additional squares of reflective tape. Divide the reading shown on the display by the number of pieces of reflective tape squares to calculate the actual rpm.

NOTE: Bright ambient light may interfere with the reflected light beam. Shading the target area may be necessary in some cases.

CAUTION: Rotating objects can be dangerous. Use extreme care.



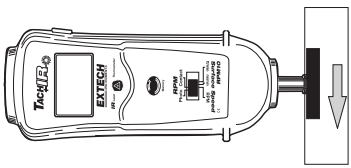
CONTACT TACHOMETER RPM MEASUREMENTS



1. Install one of the RPM contact tips on the contact shaft.
2. Move the Function switch to the CONTACT position.
3. Press the Measure button while lightly pressing the contact tip against the center of a rotating shaft.
4. Release the Measure button when the display stabilizes (approx. 2 seconds).

RPM Contact Tips

CONTACT LINEAR SURFACE SPEED (m/min ft/min) MEASUREMENTS



1. Install the Linear speed wheel on the contact shaft.
2. Slide the Function Switch to SURFACE SPEED “ft/min" or "m/min" position.
3. Press the Measure button and hold the surface speed wheel against the moving surface being measured.
4. Release the Measure button when the display stabilizes (approx. 2 seconds).

Linear Speed Wheel

Specifications

Time base	Quartz crystal 4.9152 MHz
Display	Reversible 5 digit 16mm (0.6") LCD display
Laser light source	Less than 1mW; Class 2 red laser diode (645nm approx.)
Detecting Distance	50 to 2000 mm (2 to 79") depending on ambient light and RPM
Memory	Last reading and MIN/MAX readings
Operating Conditions	0 °C to 50 °C (32 °F to 122°F); RH 80% Max
Power Supply	4 x 1.5V AA batteries
Power Consumption	24mA DC approx. (>100hrs continuous use)
Weight	300g (10.6oz). (including battery)
Size	210 x 80 x 50 mm (8.3 x 3.1 x 2.0")
Accessories	(4) 1.5V batteries, reflective tape 24" [600mm], (1) surface speed and (2) rpm rotating attachments, and carrying case
Patent Notice	U.S. Patent 7,111,981

Range Specifications

	Range	**Resolution**	**Accuracy (%rdg)**
Photo Tachometer	10 to 99,999 rpm	0.1 rpm (<1000rpm) 1 rpm (>1000 rpm)	± (0.05% + 1d)
Contact Tachometer	0.5 to 19,999 rpm	0.1 rpm (<1000rpm) 1 rpm (>1000 rpm)	
Surface Speed	0.2 to 6560 ft/min	0.1 ft/min (<1000ft/min) 1 ft/min (>1000ft/min)	± (1% + 1d)
Surface Speed	0.05 to 1999.9 m/min	0.01 m/min (<100m/min) 0.1 m/min (>100 m/min)	
Photo Tachometer Detecting Distance	50 to 2,000mm (2 to 79") typical* * specified using a 10mm square of reflecting tape at 1,800rpm. The max and min detecting distance will change with environmental conditions, reflecting tape, or speeds above 1800rpm.		

IR Thermometer Specifications

Range / Resolution	-20 to 315°C (-4 to 600°F)	1°C/F
Accuracy	± 3% of reading or ± 3°C (6°F) whichever is greater. Note: Accuracy is specified for the following ambient temperature range: 18 to 28°C (64 to 82°F)	
Emissivity	0.95 fixed value	
Field of View	D/S = Approx. 6:1 ratio (D = distance, S = spot)	
Laser power	Less than 1mW	
Spectral response	6 to 14 µm (wavelength)	

Battery Replacement

The low battery indication appears as "[ ]" on the display. To replace the batteries, loosen the two Philips head screws securing the rear battery cover and lift the cover off. Replace the four 1.5V AA batteries, and replace cover.

You, as the end user, are legally bound ( ) to return all used batteries, You can hand over your used batteries / accumulators at collection points in your community or wherever batteries / accumulators are sold!

Follow the valid legal stipulations in respect of the disposal of the device at the end of its lifecycle

airconcern

more info for Extech RPM10

Phone: 01235 838 555
E-mail: cs@airconcern.co.uk
web: www.airconcern.co.uk

Air Concern Ltd, Building 173 Curie Avenue Harwell Didcot, Oxfordshire OX11 0QG